NOTES RELATING TO THE FLORAS OF NORFOLK AND LORD HOWE ISLANDS, I.

P. S. GREEN

IN OCTOBER AND NOVEMBER 1963 I had the good fortune to visit first Norfolk Island and then Lord Howe Island in the southwestern Pacific, and to spend about a week on each, making botanical collections and observations upon the flora. The visits were made possible through funds from the Arnold Arboretum (where, at the time, I had the honor of being a staff member) and from the National Science Foundation (Grant No. GB1545), and grateful acknowledgement is made for their generous support. The immediate reason for the visits to these islands was to see certain members of the family *Oleaceae*, but the opportunity was taken to examine the general flora.

Like most oceanic islands, Norfolk and Lord Howe are noted for the high degree of endemism in both their flora and fauna. In fact, they have been referred to as "two of the most interesting oceanic islands in the world" (Good, 1964, p. 144) and as such are of particular interest to biogeographers. But biogeography must be based on accurate taxonomy and when naming the collections made on the islands it soon became clear that the existing floristic lists are quite out of date (Laing, 1915; Oliver, 1917) and that a considerable amount of work upon these floras still remains to be done, especially when the plants are considered in relation to those of the various adjacent land-masses and islands. Because of this I am gradually working over the whole vascular flora of the two islands, examining it carefully, comparing specimens with related material from Australia, New Zealand, New Caledonia, and elsewhere, and reassessing their taxonomy. Due to many other commitments this work has not progressed as rapidly as I had hoped but I have been urged to publish at least the conclusions so far reached.

LEGUMINOSAE

Sophora howinsula (W. R. B. Oliver) P. S. Green, comb. nov.

Edwardsia chrysophylla sensu C. Moore, Sketch of the Vegetation of Lord Howe Island 3.1869 & in E. S. Hill, Lord Howe Island: Official Visit by the Water Police Magistrate and the Director of the Botanic Garden, Sydney. 28. 1870, *non* Salisb.

Sophora tetraptera sensu F. Muell. Fragm. Phytogr. Austral. **7**: 26. 1869 & **9**: 77. 1875; sensu C. Moore & Betche, Handb. Fl. New S. Wales 519. 1893; sensu Tate in Fletcher, Macleay Mem. Vol., Linn. Soc. New S. Wales 217. 1893; sensu Hemsley, Ann. Bot. **10**: 235. 1896; sensu Maiden, Proc. Linn. Soc. New S. Wales **23**: 128. 1898; *non* J. Miller.

S. tetraptera J. Mill. var. *howinsula* W. R. B. Oliver, Trans. & Proc. New Zealand Inst. **49**: 139. 1917. Type: Lord Howe Island, Transit Hill, 1917, *W. R. B. Oliver* (? WELT, not seen).

S. tetraptera J. Mill. subsp. *howinsula* (W. R. B. Oliver) Yakovlev, Proc. Leningrad Chem.-Pharm. Inst. **21** (Voprosy Farmakognozii 4): 57. 1967.

Yakovlev has recently published a synopsis of the genus *Sophora* (Yakovlev, 1967) in which he includes the Lord Howe representative as a subspecies of the New Zealand *S. tetraptera*, in sect. EDWARDSIA (Salisb.) Taub.[1] He recognizes ten species in this section, together exhibiting a most interesting distribution: *S. denudata* Bory from Réunion; *S. chrysophylla* (Salisb.) Seem. from Hawaii; *S. macrocarpa* Sm. from Chile; *S. fernandeziana* (Phil.) Skottsb., *S. masafuerana* (Phil.) Skottsb., and *S. reediana* (Phil.) Yakovlev from the Juan Fernandez Islands; *S. toromiro* (Phil.) Skottsb. from Easter Island; and *S. microphylla* Ait. and *S. tetraptera* J. Mill. from New Zealand, except for subsp. *macnabiana* (R. Graham) Yakolev, a Chilean plant which he includes under *S. microphylla*, and the Lord Howe Island plant which he places as a subspecies of *S. tetraptera*.

Careful examination of the Lord Howe material at Kew leads me to believe that specific recognition for this plant is justified. Certainly the number and type of differences from the New Zealand *S. tetraptera* are of a comparable order with those from *S. microphylla* and *S. chrysophylla*. On the other hand the other subspecies which Yakovlev recognizes in this section, subsp. *macnabiana*, seems closer to the New Zealand material of *S. microphylla*, under which he places it, than do the Lord Howe Island specimens to *S. tetraptera*.

The differences noted are as follows. Leaves with fewer leaflets (9–)13–17(–19) as opposed to (17–)19–33(–39) in *S. tetraptera*, slightly larger (1.3–)1.7–2.5(–3.5) by (0.6–)0.8–1(–1.3) cm. in contrast to (0.6–)1–2(–3) by (0.3–)0.5–0.7(–1) cm., and glabrous above even in the slightly sunken midrib. Flowers smaller 2.8–3.5 cm. long (4–5 cm. long in *S. tetraptera*); calyx smaller 0.7–0.8 cm. long, not 1–1.5 cm., lightly, not densely hairy; standard a little shorter (2 cm. long) than the keel (2.5 cm. long) in contrast to 3–3.5 cm. and 4–5 cm. in *S. tetraptera*. Fruit with the surface of each segment minutely warty or uneven in contrast to smooth in the New Zealand plant.

Lord Howe Island. Without locality, ex Phytologic Museum of Victoria (K), *Milne* (K), *C. Moore 10* (K) & Oct. 1936, *McComish 19* (K); Transit Hill, low dryish forest, 12 Nov. 1963, *Green 1616* (A, K); Transit Hill, in dense shrubbery, common, approx. 125 m. alt., 17 July 1965, *van Balgooy 1014* (K).

[1] Yakovlev, like other authors, attributes this section to Seeman (Fl. Vit. 66. 1865). However, although Seeman sunk the genus *Edwardsia* Salisb. under *Sophora* L. he did not propose it formally as a section. The earliest authority to do this that I have traced is Taubert in Engler & Prantl, Nat. Pflanzenfam. III. 3: 195. 1888. E. G. Baker (in Hook. fil. Fl. Brit. Ind. 2: 251. 1878, where in most cases he carefully designates "Subgen." and "Sect.") uses an unspecified infrageneric category denoted by "§".

MALVACEAE

Sida zahlbruckneri Rech.

In 1907 Rechinger published the name *Sida zahlbruckneri*, attributing the species to Lord Howe Island and basing it upon a MacGillivray collection at Vienna. There has been no other record of this species and, through the kindness of the Director of the Naturhistorisches Museum, to whom grateful thanks are expressed, I have been enabled to examine the holotype on loan. It is clear that it has unfortunately been mislabelled at some time and that it was collected on the Isle of Pines, New Caledonia, and not Lord Howe Island. The particular MacGillivray collections of which it forms a part, were made, along with others by W. G. Milne, on the voyage of H.M.S. *Herald*, 1853–4. They were sent by MacGillivray and Milne to Kew and examination of the herbarium there reveals nothing resembling this species from Lord Howe Island, but both collectors made specimens of an identical *Sida* from the Isle of Pines, the next island visited by the *Herald* after leaving Lord Howe (Observatory Island, Isle of Pines, banks by the shore, Sept. 1853, *MacGillivray 824*, & Observatory Island, Isle of Pines, on beach, abundant, Oct. 1853, *Milne 85*). On comparing the specimens it is clear that the type of *S. zahlbruckneri* agrees exactly with these collections and must have been part of them before becoming separated and mislabelled.

In 1892 E. G. Baker in his "Synopsis of *Malveae*" described *Sida nummularia*, based on the Milne collection cited above, and, therefore, not only is *S. zahlbruckneri* no longer to be classed as one of the Lord Howe Island endemics, but in fact falls into synonymy.

Sida nummularia Bak. f. Jour. Bot. **30**: 290. 1892; Däniker, Viert. Naturf. Ges. Zürich **78** (Beibl. 19): 261. 1933; Guillaumin, Fl. Nouv.-Caléd. 209. 1948. Type: Isle of Pines, New Caledonia, *Milne 85* (K).

S. zahlbruckneri Rech. Repert. Sp. Nov. **4**: 228. 1907. Type: "Lord Howe Island" [Isle of Pines, New Caledonia], *MacGillivray* (W).

Sida nummularia, which is endemic to New Caledonia, is very similar to *S. parvifolia* DC. (Prodr. **1**: 461. 1824) based on a specimen from Réunion and widespread on the Mascarene Islands. In fact they may not be specifically distinct; however, although the 34 collections I have examined from Mauritius, the Seychelles, and the Cosmoledo and Chagos Archipelagoes (I have not actually seen a specimen from Réunion) show considerable variation, the 11 New Caledonian collections seen are very consistent in leaf shape and size. Moreover, in each case where ripe fruit was examined, the seed of the Pacific plant was found to be puberulent at the apex, near the slit in the mericarp wall, but glabrous in the plants from the western Indian Ocean. The exact status of these two species (as well as *S. discolor* Bak. f., *non* Hook., described from "Timor" [Sumba]) must await careful biosystematic work on the group.

Van Borssum Waalkes (in Blumea **14**: 192, 193. 1966) equates *Sida dis-*

color Bak. f. with *S. parvifolia* DC. and says that "it has been found on the Pacific Islands." No material is cited but it seems possible that these New Caledonian collections, together with others from Fiji, Tonga, and Samoa are involved. The specimens from these three latter groups of islands belong to *S. samoensis* Rech. (*S. microphylla* sensu Benth. in Hook. London Jour. Bot. 2: 211. 1843, & sensu Seem., Fl. Vitiensis 15. 1865, *non* Cav.) which is superficially very similar and also recorded from coral beaches, but with mericarps which are clearly biaristate, as pointed out by Däniker (Viert. Naturf. Ges. Zürich 78 (Beibl. 19): 261. 1933).

OXALIDACEAE

Oxalis corniculata L. Sp. Pl. 435. 1753; Oliver, Trans. & Proc. New Zealand Inst. 49: 140. 1917.

Var. **corniculata.**

O. reptans Sol. ex Forst. f. Prodr. 90. 1786, *nom. nud.*; Endlicher, Prodr. Fl. Norf. 72. 1833, *nom. nud.*

O. corniculata L. var. *reptans* Laing, Trans. & Proc. New Zealand Inst. 47: 28. 1915. Type: Norfolk Island, on rocks, particularly near sea shore, 1912, *Laing* (CANTY).

Norfolk Island. Anson Bay, 6 Jan. 1939, *McComish 122* (K).

Lord Howe Island. Near cultivated ground, Sept. 1853, *MacGillivray 719* (K). Southeastern slopes of Malabar, dry open rocky and grassy patches in low forest, 11 Nov. 1963, *Green 1559* (A, K); behind beach, Ned's Beach, 5 m. alt., 20 July 1965, *van Balgooy 1054* (K).

Var. **microphylla** Hook. f. Fl. Nov.-Zeland. 1: 42. 1852 & Fl. Tasm. 1: 59. 1855; Young, Watsonia 4: 56. 1958; Allan, Fl. N. Zeal. 1: 239. 1961; Hoogland in Turner *et al.* Austral. Conservation Foundation Spec. Publ. 1 (The Conservation of Norfolk Island): 34. 1968. Types: New Zealand, Whaapu, Bay of Islands, 1833, *R. Cunningham 234* (*A. Cunningham 587*) (K); Tasmania, *A. Cunningham 1837/94* & Glen Leith, 14 Sept. 1840, *J. D. Hooker* (K).

Norfolk Island. Near Kingston, alongside creek, 28 Jan. 1939, *McComish 122A* (K). Kingston, ruins of old prison, 30 Oct. 1963, *Green 1434* (A). Near Rocky Point, earthy banks and ledges on sea cliffs, 30 Oct. 1963, *Green 1461* (A). Phillip Is., eroded and rabbit infested hillside, 31 Oct. 1963, *Green 1502* (A).

The world-wide weed var. *corniculata* has been introduced to both Lord Howe and Norfolk Islands, but var. *microphylla* is most probably native on the latter. Captain Cook, when describing the discovery of the island in 1774, wrote that he found "cabbage-palm, wood-sorrel, sow thistle and samphire abounding in some places on the shores" ("A voyage towards the South Pole and round the world" 2: 148. 1777 & in "The three voyages of Captain James Cook round the world" 4: 137. 1821). It is probably this species that he refers to as wood-sorrel (although it is not

the *Oxalis* he might have known in Britain). In reference to the island, he also stated (*op. cit.* 147 & 136) that "we found it uninhabited, and were undoubtedly the first that ever set foot on it." Yet, whether his party were, in fact, the first to land on the island may be open to question, even if it was uninhabited when they discovered it. Sow thistle, *Sonchus oleraceus*, now a widespread weed, is generally considered native in the European, W. Asian and Mediterranean regions and must, therefore, have been introduced to Norfolk Island before Capt. Cook's visit. Governor King, then Lieutenant (in Hunter, "A Historical Journal of the Transactions at Port Jackson and Norfolk Island" 306. 1793), stated that on 5th April, 1788, in "a fine valley . . . . a number of plantain or banana tree" were found and later (p. 396) that "those planted out . . . . have already yielded good fruit." Although Endlicher (*l. c.* : 35) thought that *Musa* was indigenous he was probably mistaken. The island was previously probably inhabited, with the bananas planted and the sow thistle introduced (and the wood-sorrel?). (See also Thorpe in Jour. Polynesian Soc. **150**: 123–126. 1929 and McCarthy, *op. cit.* 172: 267–270. 1934, for further evidence of previous occupation of the island.)

Although var. *microphylla* is stated by Young (1958, p. 56) to be native of the "mountainous parts of New Zealand and Tasmania" the very sparse field notes on the material in the herbarium at Kew give little or no indication that this may be its habitat. Allan (1961, p. 239) says that the distribution is uncertain and that the variety occurs in North Auckland and I have certainly seen both varieties almost at sea-level on Norfolk Island.

Although Laing (1915, p. 28) gives the first valid description to go with Solander's epithet *reptans* it is clear that he bases it on the plant from Norfolk Island which, in a footnote, he says may be endemic. Before examining his type material, kindly sent on loan, I had expected it to be the small leaved var. *microphylla*; but I have been surprised to find that it proves to be var. *corniculata* although a semiprostrate, small-leaved form. Similarly, the specimen at the British Museum of the plant collected in New Zealand by Banks and Solander is a prostrate form of var. *corniculata*. Var. *microphylla* is recorded from both New Zealand and Tasmania and, from the material I have seen, is somewhat variable in pubescence. However, it seems to maintain its decumbent habit, very small leaves (less than 5 mm. long), short capsule (less that 12 mm. long), and small seeds (1 mm. or less in length). I have examined material of *Oxalis corniculata* from most parts of the world but have found var. *microphylla* from Norfolk Island, New Zealand, and Tasmania only, except for some specimens from Britain, where it is recorded as "a frequent garden escape" (Young 1958).

RUTACEAE

Acronychia J. R. & G. Forst.

A critical examination of the Norfolk and Lord Howe Island plants

that have passed under the names *Acronychia baueri* and *A. endlicheri*, together with the related plants from the mainland of Australia and islands in the Pacific, has led to a reassessment of the whole group. It is concluded that two species are involved, one consisting of three geographical subspecies and the other endemic to New Caledonia. They may be identified by the key below.

It is possible that the plant described as *Acronychia acidula* F. Muell. (Fragm. Phytogr. Austral. 4: 154. 1864) is another subspecies, but no flowering material has been seen. It occurs in tropical parts of Queensland (type locality: Seaview Range, Rockingham Bay) and has much larger leaves and fruit. Similarly, *A. vestita* F. Muell. (*l. c.* 155. 1864), of which I have seen only fruiting material may be another subspecies. It was also described from the Rockingham Bay area and the two taxa were combined by F. M. Bailey (Queensland Fl. 1: 210. 1899), but the isotypes and other material I have examined at Kew differ so much in indumentum that they may prove to be distinct.

Key to Acronychia simplicifolia and A. leiocarpa

1. Leaves usually more than 8 cm. long, (4.5–)7–13(–16) cm. long; petioles (1–)2–4(–5) cm. long; calyx 1.5–2.5 cm. long; ovary and fruit hairy or velutinous; fruit apex at least slightly pointed. ..... *A. simplicifolia.*
   2. Apex of leaf rounded or obtuse, retuse or subretuse; fruit apex slightly beaked or distinctly pointed.
      3. Petiole glabrous or minutely pubescent when young, eventually glabrate; leaves ovate-elliptic; fruit only slightly hairy and slightly beaked. ..... subsp. *simplicifolia.*
      3. Petiole pubescent, sometimes glabrous with age; leaves elliptic; fruit subvelutinous, distinctly pointed. ..... subsp. *neo-scotica.*
   2. Apex of leaf acute, sometimes rounded subacute; fruit apex slightly pointed, more or less pinched; petiole minutely puberulent when young. ..... subsp. *petiolaris.*
1. Leaves less than 8 cm. long, (2–)3–7(–8) cm. long; petioles (0.8–)1–1.7(–2) cm. long; calyx 1–1.5 mm. long; ovary and fruit glabrous; fruit apex not beaked or pointed. ..... *A. leiocarpa.*

Acronychia simplicifolia (Endl.) McGillivray & Green, comb. nov.

Vepris simplicifolia Endl. Prodr. Fl. Norf. 89. 1833. Type: Norfolk Island, Dec. 1804, *Bauer* (w, not seen).

Acronychia simplicifolia (Endl.) Steud. Nom. ed. 2. 1: 21. 1840, *nomen in synon.*; Hoogland in Turner *et al.* Austral. Conservation Foundation Spec. Publ. 1 (The Conservation of Norfolk Is.): 34. 1968, *nomen.*

Subsp. simplicifolia. Figure 1a.

Acronychia endlicheri Schott, Rutaceae. Fragm. Bot. 3. *t.* 2. 1834, *nom. illegit.*; F. Muell. Fragm. Phytogr. Austral. 9: 103. 1875; Moore & Betche, Handb. Fl. New S. Wales 518. 1893; Tate in Fletcher, Macleay Mem. Vol., Linn.

Soc. New S. Wales, 217. 1893; Maiden, Proc. Linn. Soc. New S. Wales **28:** 699. 1903; Laing, Trans. & Proc. New Zealand Inst. **47:** 29. 1915. Type as for *Vepris simplicifolia* Endl.

A. baueri Schott, *op. cit.* 5. *t.* 3. 1834; Benth. Fl. Austral. **1:** 366. 1863; F. Muell. Fragm. Phytogr. Austral. **9:** 77 & 103. 1875; F. M. Bailey, Syn. Queensl. Fl. 54. 1883; Moore & Betche, Handb. Fl. New S. Wales 49. 1893; Tate in Fletcher, Macleay Mem. Vol., Linn. Soc. New S. Wales 217. 1893; Hemsl. Ann. Bot. **10:** 233. 1896; Maiden, Proc. Linn. Soc. New S. Wales **23:** 124. 1898; F. M. Bailey, Queensl. Fl. 208. 1899 & Compreh. Cat. Queensl. Pl. 81. 1913; Oliver, Trans. & Proc. New Zealand Inst. **49:** 141. 1917; Francis, Austral. Rain Forest Trees 167. 1929 & ed. 2. 191. 1951; Anderson, Trees New S. Wales ed. 2. 231. 1947 & ed. 4. 210. 1968; Beadle *et al.* Handb. Vasc. Pl. Sydney Distr. 322. 1963. Type: Locality unknown, ? Norfolk Island, *Bauer* (? W, not seen).

A. ovata Endl. ex. Heynh. Nom. **2:** 8. 1846, *nom. nud.*

A. hillii F. Muell. Fragm. Phytogr. Austral. **1:** 26. 1858. Type: Queensland, Moreton Bay, *Hill & F. Mueller* (MEL, not seen).

Jambolifera endlicheri (Schott) Kuntze, Rev. Gen. Pl. 102. 1891.

J. baueri (Schott) Kuntze, *loc. cit.* 1891.

Bauerella australiana Borzi, Bol. Orto Bot. Palermo **1:** 155. 1898, *nom. illegit.* Type: as for *Acronychia baueri* Schott.

Acronychia baueri Schott f. *majoriflora* Domin, Bibl. Bot. **22** (89) (Beitr. Fl. Pflanzengeogr. Austral.: 848): 294. 1927. Type: Queensland, Brisbane River, *Dietrich* (not seen).

Bauerella baueri (Schott) Däniker, Viert. Naturf. Ges. Zürich **77** (Beibl. 19): 202. 1932, *quoad typ.*

Norfolk Island. Apr. 1835, *Backhouse 616* (K); margins of woods, June 1830, *A. Cunningham 29* & *148* (K); above Red Stone, 25 Aug. 1968 & 8 Mar. 1969, *Owen Evans* (K).

Lord Howe Island. *Fullager* (K); 1869, *C. Moore 17, 32* & *48*(K); low dry forest, southeast lower slope of Malabar, 11 Nov. 1963, *Green 1574* (A, K).

Queensland. North Kennedy district: Strathdickie, *Michael 1356* (GH); Rockingham Bay, *Dallachy* (K). South Kennedy district: Forest reserve 652 Cauley, approx. 30 miles S. of Proserpine, 22 May 1967, *Mackay 67/144* (K); Dalrymple Heights, rain forest, Aug.–Oct. 1947, *Clemens* (GH, K). Port Curtis district: Middle Percy Island, Jan. 1906, *Tryon* (A); Northumberland Islands, *R. Brown "5328"* (K). Wide Bay district: Mt. Perry, Aug. 1912, *Boorman* in *NSW 16272* (K); Nikenbah, *Tryon* (A); Kin Kin, Jan. 1916, *White* (K). Moreton district: Blackall Range, Dec. 1916, *White* (A); Forest reserve, Yarraman, 1400 ft. alt., Aug. 1944, *Clemens* (A); Mt. Glorious, ridge forest, 2000 ft. alt., Jan. 1945, *Clemens* (GH, K), & common in rain forest, 28 June 1937, *White 11078* (K); Mt. Mistake, 3000 ft. alt., 2 Feb. 1944, *Clemens 43591* (A); Brisbane R., *A. Cunningham* (GH), 1829, *Fraser 157, 183* & *213* (K) July & Aug. 1855, *F. Mueller* (K) & dark, dry woods, July, *A. Cunningham 3* (K); Tambourine Mt., Oct. 1909, *Simmonds* (A); Moreton Bay, Oct. 1824, *A. Cunningham 18* (K).

New South Wales. Upper Eungella, Tweed River, June 1923, *White 13268* (A); Tweed Heads, Sept. 1910, *Simmonds* (A); Richmond R., *C. Moore* (K); Lismore, Aug. 1891, *Maiden* (A); Carrai Carrai State Forest, 30 miles approx. W. of Kempsey, frequent on limestone ridge, 810 m. alt., 11 June 1958, *Con-*

stable in *NSW 46231* (K); Port Macquarie, May 1819, *A. Cunningham 49* (K); W. of Coneac (Manning R., approx. 18 miles NW. of Gloucester), small rain forest pocket by creek, 15 Oct. 1953, *Johnson* in *NSW 26274* (K); 16 miles ENE. of Singleton, patch of broad-leafed forest, 27 Mar. 1960, *Storey 7203* (K); Ash Islands, Newcastle, 1802–5, *R. Brown "5329"* (K); Wyong, Dec. 1898, *Boorman* (A); Illawarra, Nov. 1818, *A. Cunningham 169* & Aug. 1824, *A. Cunningham 4* (K); 1 mile W. of Central Tilba, very common in a dry type of rainforest on rocky hillside, 9 Sept. 1960, *Johnson & Constable* in *NSW 52308* (K); slopes of Mt. Dromedary, Central Tilba (approx. SW. of Narooma), occasional in rain forest, 90 m. alt., 12 Sept. 1953, *Constable* in *NSW 26537* (K); Milton, on igneous rock, 5 Dec. 1905, *Cambage 1420* in *NSW 26312* (A, K).

A careful examination of the Norfolk and Lord Howe Island plants shows that they do not differ taxonomically from that of the eastern mainland of Australia, from Queensland and New South Wales.

When taken in the context of the Tribe *Toddalieae* the characters used by Borzi to define the genus *Bauerella* are insufficiently distinct to justify generic separation. Unfortunately Borzi failed to take up the epithet *baueri*, although citing it in synonymy, and thus rendered his binomial illegitimate. The correct combination *B. baueri* is sometimes attributed to Engler (in Engler & Prantl, Nat. Pflanzenfam. Nachtr. II–III. 4: 35. 1900) but it is not actually made by him at this reference. The earliest valid use that has been traced is that of Däniker referred to above.

My friend and colleague D. J. McGillivray quite independently, and in connection with his work on the plants of New South Wales, came to the realization that the combination *Acronychia simplicifolia* had never been validly made and so I have pleasure in sharing with him in the combination above.

Subsp. **neo-scotica** P. S. Green, subsp. nov., a subsp. *simplicifolia* petiolis pubescentibus, foliis constanter ellipticis et fructibus subvelutinis manifeste acutis differt. FIGURE 1b.

Acronychia eriocarpa Panch. ex. Guillaum. Not. Syst. Paris **2:** 98. 1911, *nom. in synon.* & in Ann. Mus. Col. Marseille **II. 9** (Cat. Pl. Phan. Nouv.-Caléd. **1:** 39): 111. 1911, *nom. nud.*

A. baueri sensu Guillaum. *ll. cc.* (1911), *non* Schott.

Bauerella australiana sensu Guillaum. *ll. cc.* 40 & 112. 1911 & Jour. Arnold Arb. **12:** 235. 1931, *non* Borzi.

B. baueri sensu Däniker in Viert. Naturf. Ges. Zürich **77**(Beibl. 19): 202. 1932, *pro parte, excl. spec. typ.*; sensu Guillaum. Fl. Nouv.-Caléd. 168. 1948.

New Caledonia. Montaignes de Wailiou, 1861–67, *Vieillard 2704* (K); Nouméa, 1868–70, *Balansa 376* (K); Nouméa (Ouen Toro), 3 Aug. 1930, *Franc 2454* (A, K); dry stony slopes on Ouen Toro, 0–50 m. alt., 26 Feb. 1955, *McKee 2163* (K); Anse Vata, low calcareous hill, 10 July 1955, *McKee 2731* (A); Mt. Dore, 1855–60, *Vieillard 859* (K); "auf den Hügeln bei Yaouhé," 17 Oct. 1902, *Schlechter 15071* (K); Prony, *Franc* (K); Port-Boisé, 1861–67, *Deplanche 511* (K, holotype) & *Deplanche 510* (A).

New Hebrides. Eromanga, Cook's Bay, 22 July 1896, *A. Morrison* (K). Anei-

tyum: Anelgauhat, 5 June 1896, *A. Morrison* (K); Anelgauhat Bay, rain forest, common, 305 m. alt., 14 Feb. 1929, *Kajewski 761* (A, K).

This subspecies is most easily distinguished from the type by its fruit, which is fine velvety and relatively long pointed and rounded in section below the apex. In subsp. *simplicifolium*, as well as the fruit being only scattered hairy or glabrate, it is much less prominently pointed and in transverse section below the apex shows four distinct indentations (FIGURES 1a & b). Also the petiole in this subspecies is more pubescent than in the others.

The epithet chosen alludes to the fact that it occurs in both New Caledonia and the New Hebrides.

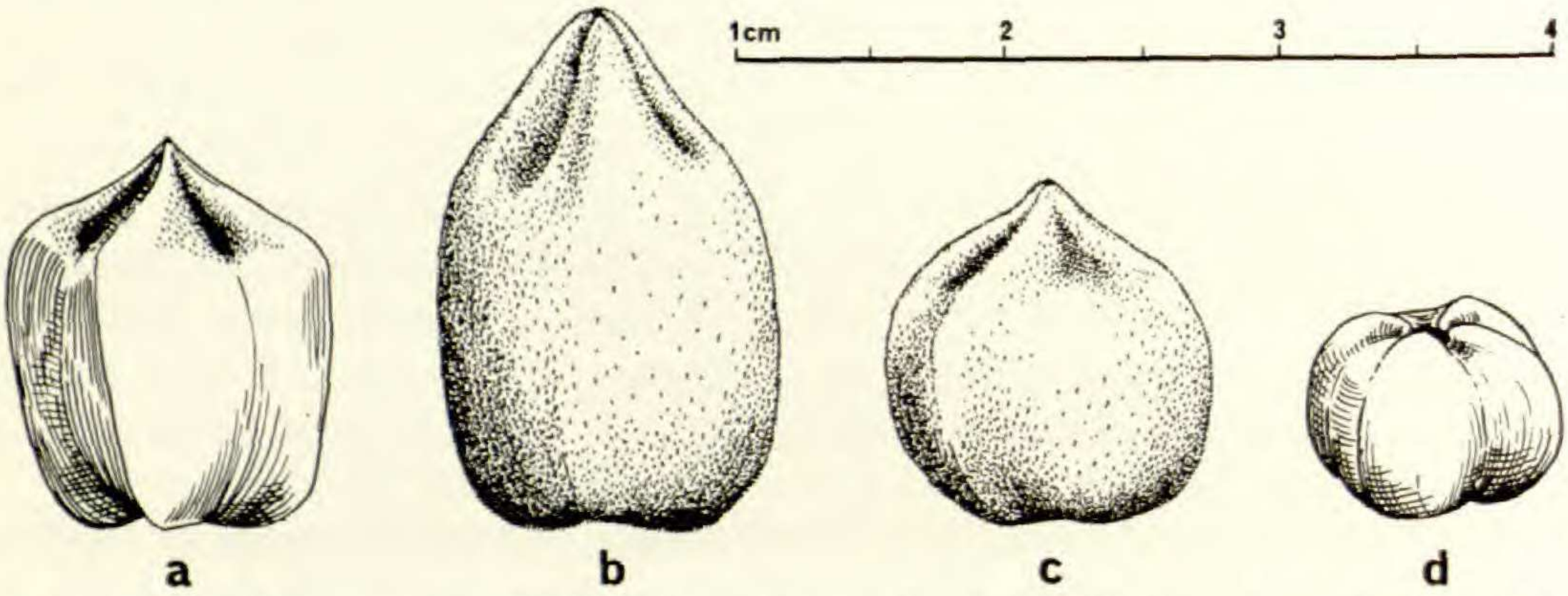

FIGURE 1. *Acronychia* fruits, all × 2. a, *A. simplicifolia* subsp. *simplicifolia* (from *Johnson & Constable NSW 52308*); b, subsp. *neo-scotica* (from *Kajewski 761*); c, subsp. *petiolaris* (from *Horne 1114*); d, *A. leiocarpa* (from *McKee 2115*).

Subsp. **petiolaris** (A. Gray) P. S. Green, comb. nov. FIGURE 1c.

Acronychia petiolaris A. Gray, Bot. U.S. Expl. Exped. **1:** 335. 1854 & *t. 33A.* 1857; Seem. Fl. Vitiensis 31. 1865; Gibbs, Jour. Linn. Soc. Bot. **39:** 142. 1909; Smith, Jour. Arnold Arb. **32:** 243. 1951; Parham, Pl. Fiji Is. 164. 1964. Type: Fiji, Mathuata, *U.S. Exploring Expedition* (GH, holotype).
Jambolifera petiolaris (A. Gray) Kuntze, Rev. Gen. Pl. 102. 1891.

Fiji. VANUA LEVU. Mbua: southern portion of Seatovo Range, 100–350 m. alt., dry forest, 20 Apr.–2 May 1934, *Smith 1702* (A, K); Bua, forest, not common, Sept. 1878, *Horne 1114* (GH, K). Mathuata: without locality, *U.S. Exploring Expedition* (GH, holotype of subsp. *petiolaris*); Dreketi, forest, *Parham, Qoro & Kuruvoli* in *Dept. Agric. 13451* (K); Dreketi district, near village Basakalave, 32 km. W. of Seaqaqa, 40 m. alt., lateritic hill, rather dense forest, 26 Mar. 1964, *Stauffer & Kuruvoli 5844* (K); Wainunu-Ndreketi divide, 200–300 m. alt., dense forest, 17 May 1934, *Smith 1841* (A, K); Seaqaqa, coffee plantation, 27 Feb. 1964, *Parham & Kuruvoli* in *Dept. Agric. 13908* (K); Seangganga Plateau, in drainage of Korovuli R., vicinity of Natua, 100–200 m. alt., patches of forest in open rolling country, 25 Nov.–8 Dec. 1947, *Smith 6711* & *6728* (A, K); southern base of Mathuata Range, N. of Natua, 100–250 m. alt., dense forest, 1–4 Dec. 1947, *Smith 6779* (A, K); southern slopes of Mt. Numbuiloa, E. of Lambasa, 100–350 m. alt., open forest, 27 Oct.–10 Nov. 1947, *Smith*

6407 (A, K); Lambasa, approx. 200 ft. alt., 17 Dec. 1922, *Greenwood 566* (K); Nasuaca, forest, *22* July 1963, *Qoro & Kuruvoli* in *Dept. Agric. 13486* (K). VITI LEVU. Mba: Nandarivatu, 2600 ft. alt., 11 Mar. 1927, *Mead* in *SFN 1987* (K) & 3000 ft. alt., in copse, June 1927, *Tothill 54* (K); vicinity of Nandarivatu, 850 m. alt., *22* Nov. 1927, *Gillespie 3984* (GH), & 900 m. alt., 14 Dec. 1927, *Gillespie 4311* (K); Sovutawambu, 5 miles from Nandarivatu, 750–800 m. alt., *27* Feb.–4 Mar. 1941, *Degener 14652* (A, K); southern slopes of Mt. Ndelainathovu, on the escarpment W. of Nandarivatu, 870–970 m. alt., dense forest, *26* June 1947, *Smith 4934* (A, K); hills between Nandala & Nukunuku Creeks, along trail from Nandarivatu toward Lewa, 750–850 m. alt., thickets on fairly open slopes, *22* Sept. 1947, *Smith 6150* (A, K). KANDAVU: understory in rainforest, *Watkins 750* (K). Without locality: *Horne 599* (GH, K).

The Fijian plant resembles subsp. *neo-scotica* in its fruit, which is not quite so pointed and is less completely rounded in section below the apex. But the leaf shape, however, is consistently different with an acute apex, rarely only subacute, never retuse or subretuse, and usually with more primary veins on each side of the midrib: (7–)9–10(–12) per side in contrast to (6–)7–9(–11) in the other subspecies.

Acronychia leiocarpa P. S. Green, sp. nov., a *A. simplicifolia* foliis minoribus, (2–)3–7(–8) cm. longis, ovariis glabris, et praesertim fructibus minoribus glabris differt. FIGURE 1d.

A. baueri sensu Pancher in Sebert & Pancher, Not. Bois Nouv. Caléd. 245. [1874], *non* Schott.

A. ligustroides Panch. ex Guillaum. Not. Syst. Paris **2**: 98. 1911, *nom. in synon.* & Ann. Mus. Col. Marseilles **II.9** (Cat. Pl. Phan. Nouv.Caléd. **1**: 40): 112. 1911, *nom. nud.*

A. ovalifolia Panch. ex Guillaum. *ll. cc.* 1911, *nom. nud.*

Small *tree* to 5 m. tall, branchlets puberulent when young becoming glabrous. *Leaves* simple; *petioles (0.8–)1–1.7(–2) cm. long*, minutely puberulous; lamina elliptic or slightly elliptic-ovate, *(2–)3–7(–8) cm. long*, by (1.5–)2–3(–3.5) cm. broad, glabrous; margin entire; apex rounded, retuse; base obtuse and more or less rounded or acute; *venation finely and clearly raised reticulate* above and below, 7–9(–10) primary nerves on each side of the midrib. *Inflorescence* axillary, condensed paniculoid, (0.5–)1–2(–2.5) cm. long, (1–)3–15-flowered, puberulent; flowers hermaphrodite, green or yellowish green; pedicels 0–1 mm. long. *Calyx* minutely tomentose externally, *lobes 4, 1–1.5 mm. long*, triangular ovate. *Corolla* valvate, minutely tomentose externally, lobes 4, 2.5–3.5 mm. long. *Stamens* 8, antesepalous 1.5–2 mm. long, antepetalous 1–1.5 mm. long; filaments flat, ciliate 0.7 mm. broad, abruptly tapered at the apex; anthers 0.5 mm. long. *Ovary glabrous*, 4-loculate, with several axile ovules; style arising from a slight depression on the top, 0.8 mm. long with somewhat flattened terminal stigmatic area 0.7 mm. in diameter. *Fruit glabrous*, rounded but more or less cuboid, apex not pointed, with 4 indentations (FIGURE 1d), red (fide *McKee 2115*), 0.6–1 cm. long and

broad, endocarp hard boney, ? indehiscent, with 2–3 black seeds per loculus.

New Caledonia. Wailou, 1861–67, *Vieillard 200* (K); Nouméa, 1868–70, *Balansa 375* & *375a* (K); Bois de Port-Despointes (Nouméa), "bois secs des collines littorales, schistes nummulitiques," 14 Nov. 1942, *Virot 810* (A), *812* (A) & *822*(A); foot of Ouen Toro, 10 m. alt., 13 Feb. 1955, *McKee 2115* (A, K); NE. slope of Ouen Toro, Nouméa, dry scrub, 26 Sept. 1963, *Green 1211* (A, isotype; K, holotype); Isle des Pins, "ad rivulum ad pedem Pic Nga," 100 m. alt., 18 July 1965, *Bernardi 10067* (K); without locality, 1862, *Pancher s.n.* & *Deplanche 491* & *510* (K); "pieds de Ma . . . ," 1900–1910, *Le Rat 2273* (A).

Acronychia leiocarpa has been confused with *A. simplicifolia*. Both species occur together, e.g. *McKee 2115* and *2163* were both collected on Ouen Toro near Nouméa, and it would be interesting to investigate their biology. However, *A. leiocarpa* is immediately separable by characters of the leaf, its smaller size and finer reticulation, and, above all, by the glabrous ovary and subsequent fruit. Other characters for separation are found in the smaller size of the flower parts, the relatively broad staminal filaments, which are usually more abruptly contracted below the anther, and the smaller, unpointed fruit (FIGURE 1D).

It appears that at one time Pancher recognized that this species was distinct and proposed the names *Acronychia ligustroides* and *A. ovalifolia* which he attached to some of his herbarium specimens, but in Sebert & Pancher "Notice sur les Bois de la Nouvelle Calédonie" 245 [1874], although describing the characteristic fruit, he equated this species with the Australian *A. simplicifolia* (as *A. baueri*). Guillaumin (in Not. Syst. Paris 2: 98. 1911) discussed Pancher's proposed species and mentioned the glabrous ovary and abruptly narrowed staminal filaments (by inference from his description of the filament of *A. simplicifolia*) but he nevertheless seems to have concluded that only one species was involved.

Zanthoxylum L.

The plants that have passed under the names *Blackburnia pinnata*, *Zanthoxylum blackburnia*, *Fagara pinnata*, etc., also need reassessment, with the recognition of a new species from New Caledonia.

Zanthoxylum pinnatum (J. R. & G. Forst.) W. R. B. Oliver, Trans. & Proc. New Zealand Inst. **49**: 140. 6 July 1917; Druce, Rep. Bot. Exch. Club Brit. Is. **4**: 653 [? Sept.] 1917; A. C. Smith, Bull. Bishop Mus. **141**: 76. 1936; Hoogland in Turner *et al.* Austral. Conservation Foundation Spec. Publ. 1 (The Conservation of Norfolk Island): 34. 1968. Type: Norfolk Island, *J. R. & G. Forster* (BM, K).

Blackburnia pinnata J. R. & G. Forst. Gen. Char. 12. *t. 6.* 1776; Forst. f. Prodr. 10. 1786; DC. Prodr. **2**: 83. 1825; Endl. Prodr. Fl. Norfolk. 88. 1833; A. Cunn. in Heward, Hook. Lond. Jour. Bot. **1**: 113. 1842.
Ptelea pinnata (J. R. & G. Forst.) Linn. f. Suppl. Pl. 126. 1781.

Samara blackburnia Spreng. Syst. Veg. **1:** 441. 1824, *nom. illegit.*
Zanthoxylum blackburnia Benth. Fl. Austr. **1:** 363. 1863; Hemsl. Ann. Bot. **10:** 233. 1896; Burkill, Jour. Linn. Soc. Bot. **35:** 30. 1901; Laing, Trans. & Proc. New Zealand Inst. **47:** 29. 1915; *nom. illegit.*
Xanthoxylon blackburnia C. Moore, Sketch of the vegetation of Lord Howe Island 3.1869 & in E. S. Hill, Lord Howe Island: Official Visit by the Water Police Magistrate & the Director of the Botanic Gardens, Sydney 8. 1870; C. Moore & Betche, Handb. Fl. New S. Wales 518. 1893; Tate in Fletcher, Macleay Mem. Vol., Linn. Soc. New S. Wales 215. 1893; Maiden, Proc. Linn. Soc. New S. Wales **28:** 699. 1903; *nomen.*
Xanthoxylon howeanum F. Muell. Fragm. Phytogr. Austral. **9:** 77. 1875, *nom. nud.*; Tate in Fletcher, Macleay Mem. Vol., Linn. Soc. New S. Wales 215. 1893, *nom. nud.*
Fagara pinnata (J. R. & G. Forst.) Engl. in Engl. & Prantl, Pflanzenfam. III. **4:** 119. 1896, & ed. 2 **19a:** 224. 1931; A. C. Smith, Jour. Arnold Arb. **32:** 227. 1951; Yuncker, Bull. Bishop Mus. **220:** 151. 1959.
F. gillespieana A. C. Sm. Jour. Arnold Arb. **32:** 228. 1951. Type: Fiji, Viti Levu, *A. C. Smith 5578* (A, holotype; K, isotype).

Lord Howe Island. "Section," Sept. 1853, *Milne* (K); Transit Hill, low dryish forest, 13 Nov. 1963, *P. S. Green 1615* (A, K) & *1617* (A, K); Erskine Valley, on lower part of ascent of Mt. Gower, dry forest on very rocky ground, 14 Nov. 1963, *P. S. Green 1669* (A, K). Without precise locality, *C. Moore 9* & *36* (K).

Norfolk Island. [1773], *Forster* (BM, K, isotypes); shady woods, 1830, *A. Cunningham 4* & *147* (K); Apr. 1835, *Backhouse 659* (K); Nov. 1898, *Robinson* (BM); May 1904, *Robinson* (K).

New Hebrides. North central Eromanga, tableland covered with bracken, volcanic ash, 500 ft. [132 m.] alt., 5 Aug. 1930, *L. E. Cockayne 53* (K).

Fiji. Viti Levu: Nandronga & Navosa, northern portion of Rairaimatuku Plateau, between Nandrau and Nanga, alt. 725–825 m., in dense forest, 4–7 Aug. 1947, *A. C. Smith 5578* (A, holotype of *Fagara gillespieana*; K, isotype); summit ridge of Mt. Loma Langa, 21 Nov. 1927, *Gillespie 3943* (GH); Naitasiri (?), Colo-i-Suva, alt. 180 m., 19 May 1961, *I. Bola 35* (K). Fulanga: in forest on limestone formation, alt. 0–80 m., 22–26 Feb. 1934, *A. C. Smith 1150* (GH, K).

Tonga. Vava'u and Lifuka, Aug. & Oct. 1855, *Harvey* (K); Vava'u, Dec. 1891, *Crosby* (K, male & female); Vava'u, in forest near Leimata village, NW. of Neiafu, 19 May 1953, *Yuncker 16045* (GH).

More material of this species, from throughout its range, is needed for examination. It is apparent that variation occurs between the populations on the island groups, or at least between those on Lord Howe and Norfolk Islands, and perhaps the New Hebrides, and between these and Fiji and Tonga. The New Caledonian plant which has been treated as this species by some is described below as a separate, but closely related, species.

No material has been seen from Tahiti but it is suspected that *Zanthoxylum nadeaudii* Drake del Castillo, Ill. Fl. Ins. Mar. Pacif. 130. 1890 & Fl. Polynésie Franç. 24. 1893 (*Blackburnia pinnata* var. *tahitensis* Nadeaud, Enum. Pl. Indig. Ile Tahiti 75. 1873; *Fagara nadeaudii* (Drake) J. W. Moore, Bull. Bishop Mus. **226:** 7. 1963) is part of this species, too. Of the main differentiating characters cited by Drake del Castillo, the

less deeply divided calyx could certainly apply to the specimens seen from Fiji and Tonga, and the leaf shape probably falls into the range of variation for this species.

For each of the specimens cited above, and those which had been determined as this species from New Caledonia, I scored the lengths of the leaf rachis and leaflet, the texture and number of leaflets per leaf, the bud shape, the petal, filament and anther length, and the fruit dimensions. After analysis of the results I was tempted to separate three subspecies together with the new species from New Caledonia, but in view of the range of variation on each of the other islands additional and better material is required to assess more accurately the following trends and differences which were noted.

NORFOLK ISLAND (type locality). Here there is a tendency for fewer leaflets (4–6 per leaf, 5–8 in Lord Howe Island specimens).

LORD HOWE ISLAND. Two specimens, *Green 1617* & *1669* (both male) appear very different from any other except the New Hebridean specimen by virtue of a sinuate-serrate upper margin to the leaflets, an articulation in the middle of individual pedicels (not more or less at the base), a small calyx, slim filaments (more or less uniformly broad from base to apex, not broadest at the base and tapering upwards), and the large anthers (1.7–1.8 mm. long in contrast to 1–1.2 mm. elsewhere). However, *Moore 9* (also male) has flowers like the type plant and, together with *Moore 39* and *Green 1615* bears foliage resembling more closely the Norfolk Island plant.

NEW HEBRIDES. Unfortunately the only collection seen from these islands is a male specimen and therefore without fruit for comparison with the related New Caledonian species, but the leaves, buds, and flowers resemble the Lord Howe Island plants represented by *Green 1617* & *1669*, although slightly smaller in all parts.

FIJI & TONGA. Here there is a tendency for the texture of the leaf to be subcoriaceous, the leaflet number to increase, (6–)8–10(–15) per leaf, the calyx to be less deeply divided, and the petals to be longer (3.5–4.2 mm. long in contrast to 2.7–3.0 mm. elsewhere).

Fagara gillespieana was described by A. C. Smith from Fiji. I have examined the type, but the leaflet size and texture, upon which, to judge from the protologue, its differentiation seems mainly to have been based, can be matched elsewhere, and appear to me to fall within the range of variation for *Zanthoxylum pinnatum*.

Zanthoxylum pancheri *P. S. Green*, sp. nov., affine *Z. pinnato*, a quo foliis plerumque brevioribus magis coriaceis, alabastris conicis acuminatis, et praesertim fructibus minoribus differt.

Blackburnia pinnata sensu Pancher in Sebert & Pancher, Not. Bois. Nouv. Caléd. 244. [1874], *non* J. R. & G. Forst.

Zanthoxylum blackburnia sensu Guillaumin, Ann. Mus. Coll. Marseilles II. **9** (Cat. Pl. Phan. Nouv.-Caléd. **1**: 39): 111. 1911, *non* Benth.

Fagara pinnata sensu Guillaumin, Fl. Nouv.-Caléd. 164. 1948, *non Blackburnia pinnata* J. R. & G. Forst.

Blackburnia pulchella Vieill. ex Guillaum. Ann. Mus. Col. Marseilles II. **9** (Cat. Pl. Phan. Nouv.-Caléd. **1**: 39): 111. 1911, *nom. nud.* Type: New Caledonia, 1861–67, *Vieillard 2452* (GH, K, isotypes).

Zanthoxylum pinnatum sensu Däniker, Viert. Naturf. Ges. Zürich **77** (Beibl. 19): 195. 1932, *non Blackburnia pinnata* J. R. & G. Forst.

Evergreen *shrub or tree* to 10 m. high; branchlets glabrous or very minutely puberulous when young. *Leaves* pinnate or imparipinnate, glabrous; rachis canaliculate, glabrous or very minutely puberulous when young, (2.5–)4–7(–9) cm. long; petiolules canaliculate 2–4(–5) mm. long; leaflets (4–)6–8(–14) in opposite pairs, subcoriaceous, asymmetrically elliptic to ovate, the part on the adaxial side of the midrib much broader than that on the abaxial, (1.4–)1.8–4.5(–5.5) cm. long by (0.9–)1.2–2.4(–2.8) cm. broad; margin entire, slightly recurved; apex obtuse or bluntly and shortly acuminate; base obtuse or acute, adaxial part usually rounded, the abaxial narrowly acute; venation raised and more or less reticulate above and below. *Inflorescence* axillary, cymose, paniculate, (3–)4–8(–9) cm. long, very minutely puberulous. *Flowers* unisexual, 4-merous. *Calyx* synsepalous, lobes shallow or broadly triangular, 0.5–0.75 mm. long. *Corolla* valvate, more or less conical and bluntly acuminate in bud; petals lanceolate, 2–3 mm. long. *Stamens* antesepaline, filaments 1.2–1.5 mm. long; anthers 0.5–0.7 mm. long. *Ovary*, in male flowers narrowly conical, 1 mm. long, abortive; in female flowers ellipsoid, 1.8–2 mm. long, 1.2 mm. broad; style subapical, curved, 0.5 mm. long. *Fruit* more or less spherical, 1-seeded, bivalved capsule, 7–8 mm. long, 5–7 mm. broad; seed black, shiny.

New Caledonia. Without locality: "collines buisées," 1879, *Pancher s.n.* (holotype, K; isotype, BM); *Le Rat s.n.* (A). "In parva insula Jandé," *Vieillard 2451* (BM). Pum, 1861–67, *Deplanch 10* & *297* (A, GH, K). Mt. Poume, 1868–70, *Balansa 3137* (BM, K). Poume, frequent, less than 1000 ft. [308 m.] alt., scrub, 12 Dec. 1934, *Compton 2386* (BM). Montagne de Gomouen, près Gatope, 1861–67, *Vieillard 310* (GH, K). Collines de Gomouen, Gatope, 1861–67, *Vieillard 2452* (BM, GH, K). Oundjo, between Koné and Voh, alt. 0–100 m., 30 Mar. 1956, *McKee 4211* (A, K). Bourail, 1868–70, *Balansa 1170* (BM, K) & 29 Mar. 1869, *Balansa 1171* (A, BM, K). Tontouta Valley, steep rocky slope, N. side of valley at junction of Kaleouéhola, alt. 50–300 m., 15 July 1956, *McKee 4894* (K). Nouméa, 1868–70, *Balansa 433* & *1687* (BM, K). Nouméa (Ouen Toro), 1 May 1917, *Franc 2099* (A). Bois de Port-Despointes (Nouméa), "bois secs des collines littorales, schistes nummulitiques," 14 Nov. 1942, *Virot 820* (A).

After concluding that the New Caledonian plants which have passed under the name *Zanthoxylum pinnatum* constitute a distinct and undescribed species, it was interesting to discover that von Mueller had come to the same conclusion about a century ago (see Fragm. Phytogr. Austral. 7: 141. 1871). I have followed his suggestion in naming the species after the French collector and botanist J. Pancher.

Zanthoxylum pancheri is closely related to *Z. pinnatum*; the leaves are more coriaceous, although occasional specimens of the latter species from Fiji approach it in this character, also the leaves are generally

shorter and smaller. Most clearly, however, it is separable by the size of its fruit, 7–8 × 5–7 mm., as opposed to 10–12 × 7–10 mm. in *Z. pinnatum*. Furthermore, a good "spot" character when the flowers are in bud is the conical, somewhat acuminate, bud, in contrast to an obtuse, rounded bud in the other species.

VIOLACEAE

The nomenclature of the shrubby members of this family on Norfolk and Lord Howe Islands has been remarkably confused, but a comparison of specimens from these islands with material from New Zealand, Australia, and other Pacific areas has shown that three separate taxa are worthy of recognition. Beuzenberg (1961) has shown that the genera *Melicytus* J. R. & G. Forst. and *Hymenanthera* R. Br. should be united and, following him, the three taxa are placed in the genus *Melicytus*.

Melicytus latifolius (Endl.) P. S. Green, comb. nov.

Hymenanthera latifolia Endl. Prodr. Fl. Norfolk. 70. 1833 & Ic. Gen. Pl. xiii. *t. 108*. 1840; Tate in Fletcher, Macleay Mem. Vol., Linn. Soc. New S. Wales 215. 1893; Kirk, Trans. & Proc. New Zealand Inst. **28:** 514. 1896; Maiden, Proc. Linn. Soc. New S. Wales **28:** 696. 1903; Hemsley, Bull. Misc. Inf. Kew **1908:** 95. 1908; Laing, Trans. & Proc. New Zealand Inst. **47:** 32. 1915; Hoogland in Turner *et al.* Austral. Conservation Foundation Spec. Publ. **1** (The Conservation of Norfolk Is.): 35. 1968.

Suttonia ? tenuifolia Hook. f. Fl. Antarct. **1:** 52. 1844; Mez in Engler, Pflanzenreich IV. **236** (Heft 9): 335. 1902.

Norfolk Island. Without precise locality: *Bauer* (K, isotype), *Caley* (A) & April 1835, *Backhouse 628* (K); skirts of woods, July 1830, *A. Cunningham 43* (holotype of *Suttonia tenuifolia*, K). Upper slopes of Mt. Pitt, 1937 & 1939, *McComish 45* (A, K).

The exact identity of Hooker's *Suttonia tenuifolia* has been held in some doubt; Laing in his list of Norfolk Island plants (Laing, 1915) says he knows nothing of it and Mez in his monograph of the *Myrsinaceae* in Engler's Pflanzenreich places it as a "species dubia." However, the type specimen, with the name in Hooker's hand, had, to judge from the pencil annotations upon it, been early recognized as not belonging to the *Myrsinaceae* and marked "cfr. *Melicytus*" and "cfr. *Hymenanthera*," where it was found in the Kew herbarium.

In November 1937, Capt. J. D. McComish noted that he had only found one tree of *Melicytus latifolius* and that he had "made a thorough search, but cannot find another." However, in 1939 he said that he has "now found several other trees but none as large as the original." Turner, Smithers & Hoogland in their excellent report on "The Conservation of Norfolk Island" p. 35, say "A small tree, fairly common in the forests of Mt. Pitt Reserve, in particular at the higher levels." However, there may be some confusion with *M. ramiflorus* subsp. *oblongifolius*, see below.

Melicytus novae-zelandiae (A. Cunn.) P. S. Green, comb. nov.

Scaevola ? novae-zelandiae A. Cunn. Ann. Mag. Nat. Hist. **2:** 52. 1839. Type: New Zealand, North Island, at Matauri, on the sea coast opposite the Cavallos Isles, 1834, *R. Cunningham* [*429*] (K).

Hymenanthera novae-zelandiae (A. Cunn.) Hemsley, Bull. Misc. Inf. Kew **1908:** 96. 1908; Allan, Fl. New Zeal. **1:** 194. 1961.

Subsp. **centurionis** P. S. Green, subsp. nov., a subsp. *novae-zelandiae* foliis chartaceis angustioribus, caulibus junioribus minute papilloso-puberulis differt.

Hymenanthera latifolia sensu Hemsley, Ann. Bot. **10:** 231. 1896, *non* Endl.

H. novae-zelandiae sensu W. R. B. Oliver, Trans. & Proc. New Zealand Inst. **49:** 143. 1917, *non* (A. Cunn.) Hemsl.

Shrub to 2.5 m. high with many stems; branches spreading, glabrous or very minutely papillose-puberulent when young. *Leaves* chartaceous; petioles 2–5 mm. long; lamina oblanceolate-elliptic, (3.5–)4–7 cm. long, (1.2–)1.5–2.7 cm. broad; base narrowly cuneate and decurrent onto the petiole; apex acute or obtuse and rounded; margin crenate-serrate with (3–)5–6(–8) teeth per side, not thickened or recurved; veins raised and reticulate above and below, (4–)5–6(–7) primary veins per side. *Inflorescence* axillary to old leaves or their petiole scars with 1 or 2 fasciculate dioecious flowers; pedicels 1.5–2 mm. long with, in the middle, 2 opposite bracts with erose rounded margins. *Calyx* of 5 imbricate, erose, rounded lobes about 1 mm. long and 1–1.2 mm. broad. *Corolla* of 5 lanceolate rounded lobes 2.5–4 mm. long (the smaller in the ♀) more or less reflexed at their tips. *Stamens* 5, connate by a dorsal membrane produced laterally and above the anthers into 5 more or less lanceolate lobes 2 mm. long, slightly curled at the apex and erose-fimbriate; anthers 1 mm. long with a more or less cuneiform nectariferous sac borne dorsally 0.6 mm. long. *Ovary* elongated ovoid 2.5 mm. long, contracted into a very short style with 2 somewhat recurved stigmatic lobes. *Fruit* globose, (?) a berry, about 5 mm. in diameter, with a persistent style.

Lord Howe Island. "Apparently scarce, as I have only seen 4 plants," 15 Nov. 1938, *McComish 166* (holotype, K); Dawson's Point, *Eclipse Expedition, C. Moore 64* (K); without precise locality, *Fullager* (K).

Although previously treated as the New Zealand plant, this subspecies is quite distinct. Not only are the leaves much thinner in texture and narrower in proportion to their length, giving them a more narrowly cuneate base, but the margins are not, or scarcely, thickened and recurved. In addition the young stems and bases of the petioles when examined through a strong lens are found to be papillose-puberulent and not glabrous as in the New Zealand plant. Any floral differences that exist are small and it is clear that separation at the rank of species is scarcely justified.

It is a pleasure to name this plant in honor of Captain J. D. McComish who, in a letter to the Director of the Royal Botanic Gardens, Kew,

wrote on 9th November 1946, "I am convinced that this plant is not identical with the New Zealand plant and Dr. Oliver agrees with me in this. However, all the plants, so far as I know, bear only pistillate flowers, but I have a man searching the Island for plants with staminate flowers." Whether any were found I do not know but we may hope that staminate plants exist and that this subspecies, which must be very rare, does not become extinct. The plant from which the Fullager collection cited above came, bore male flowers.

Melicytus ramiflorus J. R. & G. Forst.
Subsp. **oblongifolius** (A. Cunn.) P. S. Green, stat. & comb. nov.

Hymenanthera oblongifolia A. Cunn. Hook. Lond. Jour. Bot. **1:** 124. 1842.
Melicytus ramiflorus sensu Hook. f. Handb. New Zealand Fl. 17. 1867, *pro parte*; F. Muell. Jour. Bot. **23:** 354. 1885; C. Moore & Betche, Handb. Fl. New S. Wales 518. 1893; Maiden, Proc. Linn. Soc. New S. Wales **28:** 697. 1903; Laing, Trans. & Proc. New Zealand Inst. **47:** 32. 1915, *non* J. R. & G. Forst.
Hymenanthera dentata R. Br. var. *oblongifolia* (A. Cunn.) Kirk, Trans. & Proc. New Zealand Inst. **28:** 511. 1896.

Norfolk Island. June-July 1830, *A. Cunningham 44* (K); "on the skirts of woods, at Long Ridge, at the junction of the old cross road leading to Cascade Road," July 1830, *A. Cunningham 42 (127*)* (holotype, K); April 1835, *Backhouse 641* (K); woods, June 1855, *Milne 4* (K).

No recent collections of this plant have been seen but Laing (1915) says that it is "not uncommon in the bush." It is to be hoped that it is protected from extinction.

LITERATURE CITED

ALLAN, H. H. 1961. Flora of New Zealand **1.** Government Printer, Wellington.
BEUZENBERG, E. J. 1961. Observations on sex differentiation and cytotaxonomy of the New Zealand species of the *Hymenantherinae* (*Violaceae*). New Zealand Jour. Sci. **4:** 337–349.
GOOD, R. 1964. The geography of the flowering plants, ed. 3. Longmans, Green & Co., London.
LAING, R. M. 1915. A revised list of the Norfolk Island flora with some notes on the species. Trans. & Proc. New Zealand Inst. **47:** 1–39.
OLIVER, W. R. B. 1917. The vegetation and flora of Lord Howe Island. Trans. & Proc. New Zealand Inst. **49:** 94–161.
YAKOVLEV, G. P. 1967. Zametki po sistematike i geografii roda *Sophora* L. i blizkikh rodov. Proc. Leningrad Chem.-Pharm. Inst. **21** (Voprosy Farmakognozii 4): 42–62.
YOUNG, D. P. 1958. *Oxalis* in the British Isles. Watsonia **4:** 51–69.

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